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Capabilities and Perspectives for Cybernized Services: Commentary to Tuure Tuunanen and colleagues' IRIS/SCIS keynote reflection

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Reflection note:

Capabilities and Perspectives for Cybernized Services

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With appreciation I take this opportunity to comment on Tuure Tuunanen and colleagues' reflection on the thought-provoking keynote speech at IRIS42/SCIS10 held in Nokia, Finland in August 2019. Drawing from their work, I reflect and aim to perhaps expand some of the inspiring ideas on service cybernization. The authors discuss the evolution of services from human-activity driven to digital to cybernized. The concept of *cybernization* is harnessed to emphasize the role of cyber-physical systems for "context-aware and interactive services" powered by technologies, such as artificial intelligence (AI) and sensors. Building on service research, the authors explore value creation within cybernized services by the interconnected values *co-creation* and *co-destruction*.

It is intriguing to reflect on how the concept of value co-destruction coupled with novel, technology-intensive service forms will pose new challenges and opportunities for organizational learning (Levinthal and March 1993). Questions, such as how organizations develop and utilize their *sensing* capability for improved service offering and innovative market opportunities (Teece 2007) may take new tones. *Scoping* and *scanning* the possibly weak signals (Day and Schumacher 2016) attained from the collected data on value co-destructive events in service usage may become focal. It seems that if organizations are able to learn from the value destructive events, value co-destruction has the potential to lead to improved services: As we learn to better understand users'

drivers in cybernized service usage, completely new kind of value may be derived from the cases initially deemed as value destrcutive.

Following the call from the authors, how is value co-destruction unique in cybernized services, then? It can be seen that value may effectively be co-destructed in all, traditional, human-intensive and technology-intensive services, but the difference seems to lie in the mechanisms. One key appears to be in how and when the service provider is able to act, as the experienced value begins to decline. In traditional digital services, value co-destruction would likely be evaluated after the occurrence, after the process of value creation has already been interrupted. For a simple instance, an automated airline check-in kiosk returns an error message as a consequence of a user's choices. Whereas, in a human-intensive service event, there is a chance of the human actor to take corrective action accordingly, also in the middle of the service. As the cybernized service space evolves, preventative measures may be taken, while the service is being delivered to avoid imminent decline in created value. It seems viable that as cybernized service systems become more and more sophisticated, they will detect and collect data of such instances, learn and even teach us human beings. Improved service designs may be achieved, as human obstacles, such as perception biases or individual-dependent attitudes can be bypassed (cf. Carugati 2018 and the banking sector example).

Not only the embedded and increased data handling and decision-making by technologies, such as AI, sensors and robotics, but also—or even more so—the human factors (Saunila et al. 2019) in their many forms gain new weight. For example, stakeholders' competing concerns of technological development and organizational transformation, when adopting services based on emerging technologies (Aaen forthcoming) need to be acknowledged. From a service provider's perspective, human factors in customer and service orientation capabilities have been found important for value co-creation in digital services (Saunila et al. 2019). These digital service capabilities (Saunila et al. 2019) could be seen among the organizational building blocks for creating value as service offerings evolve from digital to cybernized. Hence, we could ask how the requirements and manifestation of customer and service orientation (Saunila et al. 2019) perhaps change, as the machine takes a greater and more nuanced role in customer facing points of service delivery.

Discussing the interrelation between value co-creation and co-destruction, the authors present that "the technological complexity of the offered services combined with reduced human involvement from the provider side, may cause increased opportunities for value co-destruction but also value co-creation". I would like to carry this thought on by asking is it the *reduced human involvement* that will cause these increased opportunities? Is it possible that the increase would primarily be enabled by the amplified

machine involvement? On the one hand, the current machine may not be as sensitive and subtle in human-type communication as we humans are. On the other hand, following the reflection note, it may already perceive things and collect data in ways which would be humanly impossible. Perhaps this balance opens paths for opportunities both in value co-creation and co-destruction.

Finally, the authors encourage many promising avenues for interdisciplinary research in the sphere of cybernization. Motivating arguments for understanding and availing of the changing ways of interaction and service processes are presented. Along with design science and other research prospects, I see a need to explicitly involve the perspective of critical research (Stahl 2008): The more we use digital artifacts as social acts, the more they tie in with our core human characteristics, such as identity construction, or detection of our mental states (Carugati 2018), the more a critical enquiry on ethics and power (Stahl 2008) is also required. Many ask what happens to our data and identities, who own them? We can also consider how technology takes decisions for us, within the boundaries of options determined by algorithms. On a more philosophical level, we may even ponder what happens to human beings as social creatures, as technology embeds in roles previously human (e.g.; Mittelstadt et al. 2016; Kiron and Unruh 2018.) These kinds of questions become all the more relevant as we adopt cybernized services both in personal and organizational settings. With these thoughts, I would like to thank the authors for their insight and convincing use cases, which may influence many areas of our future lives.

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